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The Mosida Site: A Middle Archaic Burial from the Eastern Great Basin

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THE Archaic Period (8,000 B.C. to A.D. 500) in Utah is best known through numerous cave excavations. Danger Cave, Hogup Cave, the Promontory caves, Spotten Cave, Cowboy Cave, and others contained layer after layer of dry, cultural deposits evidencing human presence and hinting at the activities carried out at these sheltered sites over thousands of years (see Jennings 1978 and Aikens and Madsen 1986 for reviews of this work). Despite the tons of dirt excavated at such sites, surprisingly few remains of the people themselves have been found (see Smith 1952 and Buettner-Janusch 1954 for an important, but poorly dated, exception).

The fortuitous discovery of a middle Archaic burial at an open site on the shore of Utah Lake in the eastern Great Basin, therefore, is important as it provides scarce information about: 1) burial patterns; 2) the health and stature of indigenous populations; 3) ideology; and 4) the relationship between dogs and people during the mid-Archaic Period.

UTAH VALLEY AND SITE SETTING

Utah Valley lies in the shadow of the Wasatch Range on the eastern edge of the Great Basin. The valley is home to Utah Lake, a large, shallow, fresh body of water that in precontact times contained a highly productive fishery and numerous other wetlands-related plant and animal resources (Heckman et al. 1981; Janetski 1991). These abundant resources,

along with reliable fresh water from streams draining the Wasatch Mountains, attracted people in prehistory as they have in historic times (the Wasatch Front area is the population hub of Utah). Steward (1938:49), for example, stated that aboriginal populations in Utah Valley at the time of Euroamerican contact were among the densest in the Great Basin.

Archaeological data tend to support the pattern of relatively high population density for the more distant past as prehistoric sites are common in Utah Valley along streams and the lake shore (Janetski 1990a, 1990b). Fremont (farming) sites dating between A.D. 900 and 1300 are abundant, while open Archaic (pre-farming) occupations are rare, especially in the heavily farmed and developed valley bottom. Prior to the discovery of the Mosida Burial and the associated scatter of artifacts, only one lake shore site could confidently be assigned to the Archaic Period. A similar pattern of scarce Archaic presence occurs to the north around the edge of the Great Salt Lake where no occupations have been identified (cf. Simms et al. 1991), although Archaic use of nearby caves was heavy. The reasons for this apparent scarcity of open Archaic sites are likely related to sedimentation and erosion; i.e., the older sites are either buried or washed away.

The Mosida Burial (42Ut808; named for a nearby abandoned town) lies on a broad, flat beach on the southwest shore of the lake (Fig.

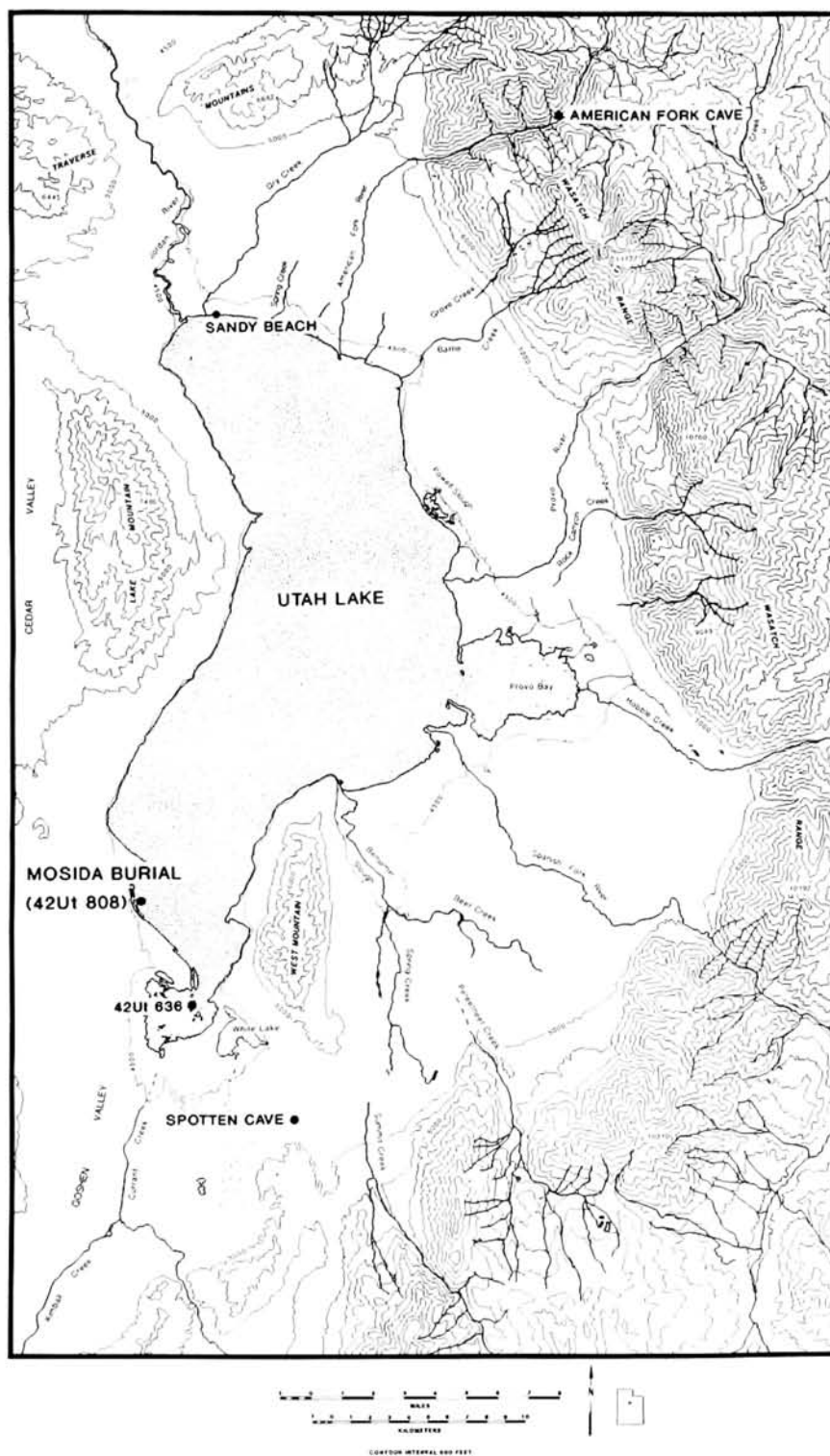


Fig. 1. Location of the Mosida Burial in Utah Valley.

1). The elevation here is about 1,367 m. (4,485 ft.). There is no visible fresh water source in the immediate vicinity of the site, although in the past Currant Creek flowed into Goshen Bay about 8.5 km. to the south. Modern vegetation along the shore is affected by the highly dynamic character of the lake which fluctuates from 1 to 1.2 m. annually due to its use as a reservoir. However, introduced species (*Tamarisk*, *Tamarix* sp. and Russian olive, *Oleaster angustifolia*) flourish along the shoreline, and native plants (bulrush, *Scirpus* spp., grasses, and weeds) are still common along the beach.

The burial was located at the north end of an extensive lake edge scatter of prehistoric cultural debris which included grinding implements (one-handed, bun-shaped manos and large slab metates), several well-thinned bifaces, a few flakes, and a stone net-sinker. No clearly temporally diagnostic artifacts (ceramics or projectile points) were found in this scatter.

At the time of the excavation no artifacts or human remains were noted on the surface of the burial pit, although darkly stained sediments were clearly visible. Some disturbance had been caused by the discoverers and the Utah County Sheriff who removed a portion of the burial to determine its age. The rest of the burial was excavated with routine archaeological procedures exposing the remaining skeletal materials as illustrated in Figure 2. All excavated sediments, which were very wet and difficult to control, consisted of fine lake silts which tended to be light gray outside of the pit and darkly stained within it. Excavations were restricted to the burial pit and the immediate vicinity. All sediments were either collected or water screened using 1/8-in. sieves. Notably, the Sheriff did the majority of his subsurface probing in the north and east half of the burial pit near the legs and pelvic regions, although he did remove the skull and some ribs.

The Burial

The burial pit contained the skeleton of a man and a dog, and assorted burial items. The pit was symmetrical and oval-shaped with the long axis oriented southwest-northeast. It measured 1.25 m. by 1.85 m. The depth was difficult to determine as lake action had eroded the surface of origin for the pit and mixed the sediments overlying and, to a certain extent, within the burial (see Simms et al. 1991 for a discussion of similar problems in burial recovery on the Great Salt Lake). Only about 15 cm. of burial fill appeared to be intact. The man lay on his back on the north side of the pit with his head to the southwest and legs flexed (Fig. 2). The dog lay at the south edge of the burial pit with its head toward the east. In the absence of evidence to the contrary, it is assumed that the dog and the man were placed in the pit at the same time.

Burial Goods

Items of material culture found with the burial include bone tools, a large projectile point, textiles and various faunal remains.

Bone Tools. A total of 11 bone and antler tools was found at the site, five of which are illustrated (Fig. 3). Five of the tools were recovered by the Sheriff during the initial exploration and one was found on the surface during the excavations. The remainder were recovered during excavations. A complete antler tool (Fig. 3d) was found lying on the bottom of the pit just north of the skull of the man. Nine of the tools are made of split antler, probably deer (Figs. 3a, b, d; the other six antler tools are fragments only and are not illustrated), only one of which is complete (Fig. 3d). All of the split antler tool ends are rounded and show moderate wear or polish. All shafts exhibit evidence of scraping as a result of shaping during

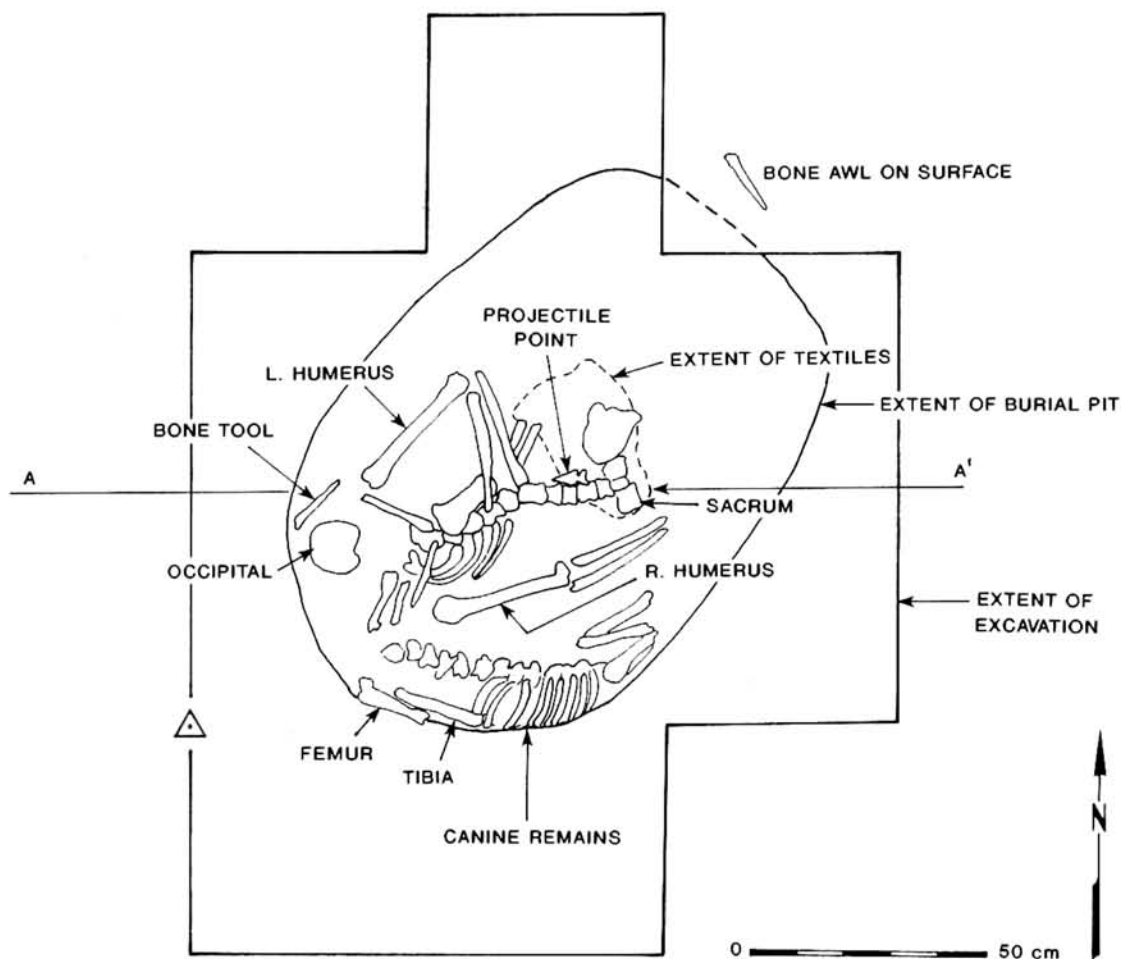


Fig. 2. Plan view of excavated burial.

manufacture. The complete tool measures 14.5 by 1 by 0.7 cm. All things considered, the most reasonable functional interpretation of these antler tools is that they were pressure flakers (cf. Aikens 1970:87).

The remaining antler tool is fragmentary, but was partially reconstructed (Fig. 3a). It is a composite made from two antler tine junctures or forks and appears to have functioned as a handle for a tool. The narrow end of the "handle" has been rather cleanly cut off and the interior hollowed out.

The two bone tools are awls. A complete awl (Fig. 3c) measuring 12 cm. in length is made from the metatarsal of an artiodactyl, likely a deer (*Odocoileus* sp.). It exhibits numerous longitudinal striations and other shaping marks. Heavy polish that interrupts the manufacturing striations is visible on the last 0.8 cm. of the awl tip. The other awl was fragmented but has been reconstructed to reveal its long (20 cm.), slender shape (Fig. 3e). The tip is still missing. It also shows many manufacturing scars, both longitudinal and across the grain.

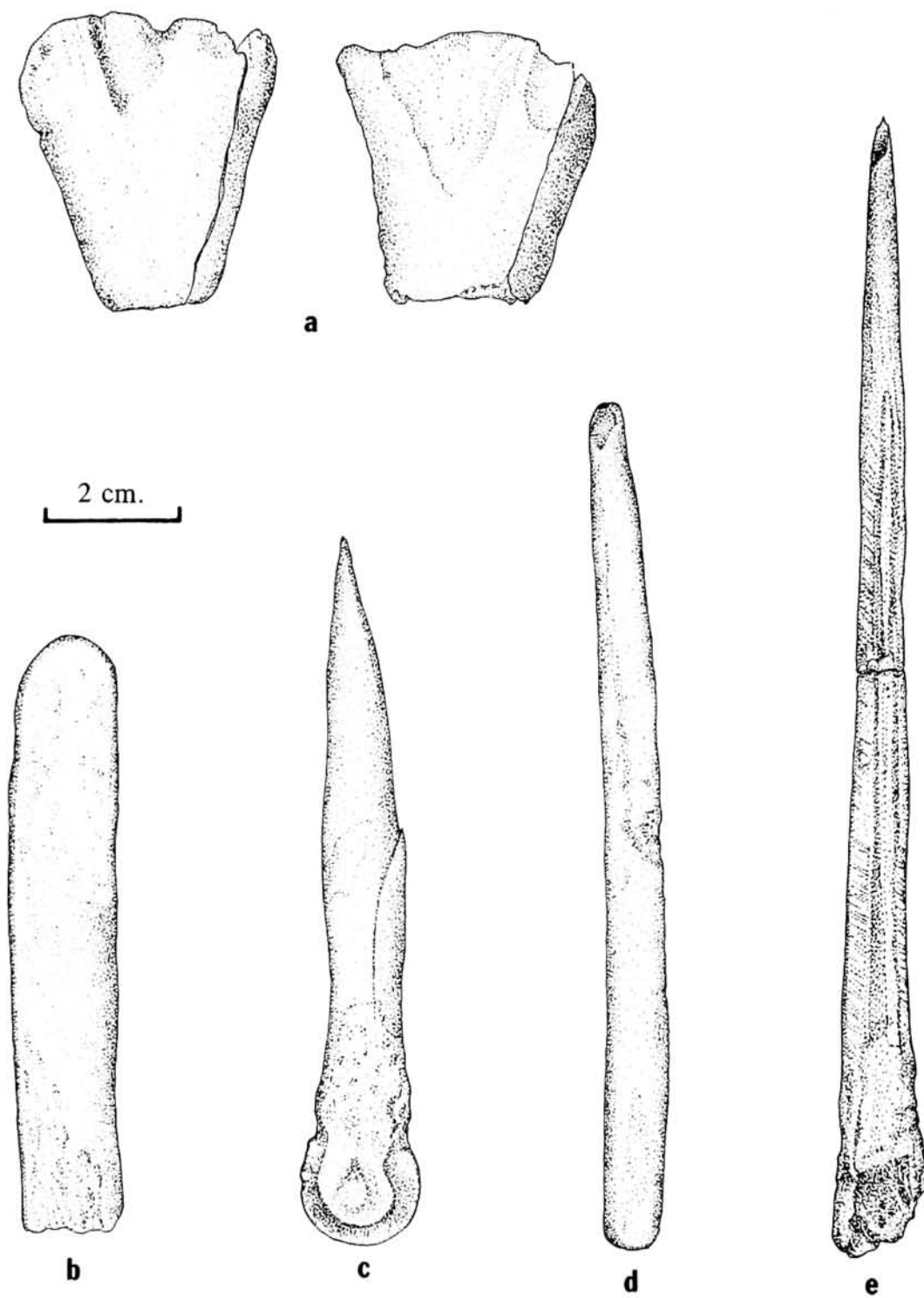


Fig. 3. Bone and antler tools: a) composite antler "handle," b) and d) antler flakers ?, c) and e) bone awls.

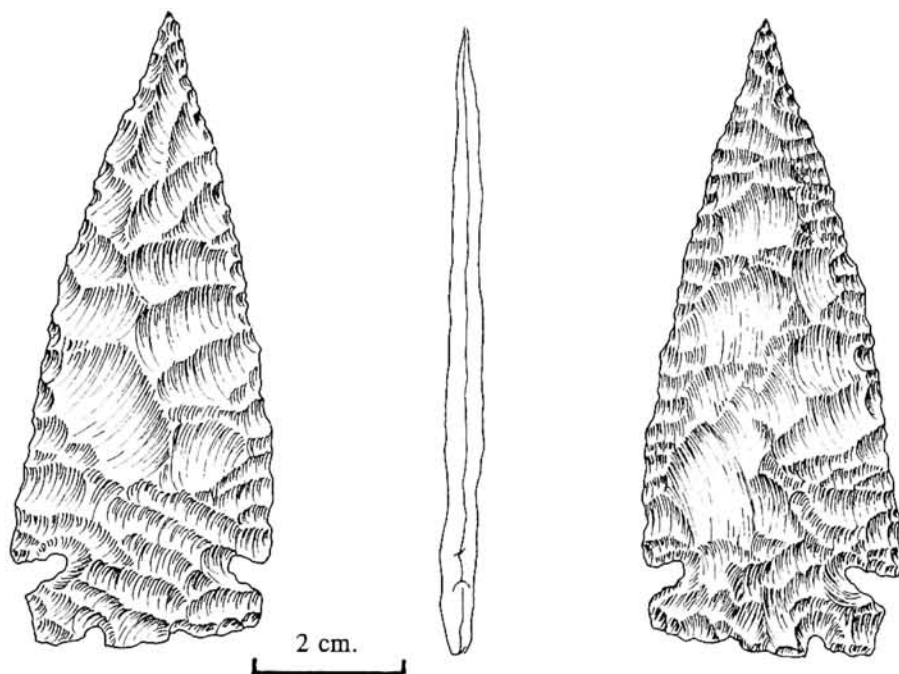


Fig. 4. Northern Side-notched projectile point found in the burial pit.

Projectile Point. The projectile point (Fig. 4) was found *in situ* lying alongside and slightly under the lumbar vertebrae of the man. The point was lying flat with the distal end pointed toward the head of the burial. It is slightly asymmetrical and measures 8 by 3.5 cm. and has been well-thinned. There are two evenly spaced, subtle notches on the base. The asymmetry of the artifact suggests that the tool may have been re-worked (John E. Clark, personal communication 1991), although it shows little or no wear. The material from which the point is made is a medium to dark gray chert with dark inclusions. Following Holmer (1986), the point was classified as a Northern Side-notched dart point, a style that, again following Holmer (1986:96), dates to sometime in the mid-Archaic in the eastern Great Basin. Its large size may suggest that it functioned as a handled knife or spear rather than an atlatl point.

The point was subjected to protein residue analysis to explore the possibility of use prior to being placed in the grave. That analysis (Margaret Newman, personal communication 1991) was negative and may suggest that the point was made specifically as a burial object, the possibility of reworking notwithstanding.

Textiles. Remarkably, two kinds of textiles were preserved in the pelvic area of the burial: twined matting and coiled basketry (Fig. 5). The preservation of these perishables in an open site can be attributed to the lake edge context of the burial, apparently resulting in the pit contents being continuously wet. The textiles were recognized in the field as a layer of darkened, fibrous organic material overlying the left pelvis and lower vertebral area of the human remains. Three samples of these organic remains were collected as intact as was possible under the circumstances. The identification of this material as textiles was not confirmed until they were



Fig. 5. Textiles from the burial pit.

subjected to controlled cleaning in the lab. At that time both kinds of textiles were noted and it was clear that the coiled basketry lay on top of the twined matting. The stratigraphic relationship of these two textiles can be seen in Figure 5.

As might be expected, only fragments of the textiles were found, the largest of which is illustrated in Figure 5. The majority of the fragments were of the twined matting. The construction technique for the matting is open simple twining with "z" twist (down to the right) weft, a common type throughout the Great Basin (Adovasio 1974). Both the warps and wefts are of juniper bark. The fragment exposed by cleaning appears to contain a selvage end. The size of the fragment in Figure 5 is 25 by 17 by 2 cm. thick. The space between the wefts is 3 cm.

The coiled basketry is a close-coiled type with what appears to be single rod or possibly a rod-and-welt foundation. The basketry fibers are fragile, distorted, and extremely difficult to separate while maintaining the integrity of the construction techniques. Regardless, either of the foundations mentioned would be appropriate for the area and time period (Adovasio 1974: 115). The form of the basketry could not be determined for the various reasons given above. At least two layers of basketry are visible in the large fragment suggesting that the basket was crushed and folded after being placed in the grave. It is possible that more than one basket is represented.

Faunal Remains. The most complete faunal remains found in the burial pit were those of a dog. The dog is described briefly below (see Lupo and Janetski [MS] for a more complete description and comparative discussion of the dog remains). Other faunal remains are listed in Table 1. It is not clear whether the latter were purposefully placed in the pit, deposited as the burial pit was being filled in, or washed in at some later date. Interestingly, at

least one of the bones exhibited scatological damage and may have come from the dog's digestive tract. The presence of phalanges from a fetal artiodactyl is likewise intriguing. Explanations for these bones might include the presence of a skin bag made from a young deer or antelope with the feet left on, but this is highly conjectural.

Dating

A 45-g. sample of the twined juniper bark textiles was submitted to Beta Analytic, Inc. for dating. The result was a date of $4,720 \pm 70$ B.P. (Beta-46968, calibrated two-sigma range is 3,649-3,352 B.C., following Stuiver and Reimer [1987]). The date is consistent with the temporal range of the projectile point style found in the grave.

Human Remains

The Body. Removal of the skeleton occurred in two phases, the first by the Utah County Sheriff in which most skull bones and several long bones and ribs were taken out. Remaining bones were exhumed by proper archaeological excavation as described above.

The skeleton is that of a middle-aged, American Indian male (a more detailed description is found in McCullough et al. [MSa]). The jaw is robust and teeth all present, but some worn down to the gumline. The upper medial incisors demonstrate the common AmerIndian form of shoveling and slight winging. A Y-5 cusp pattern is evident on the lower M_3 . The palate is deep and box-shaped, as seen in later Great Basin AmerIndian crania. Molars are wide and protrude laterally almost to the width of the parietal walls. Tooth wear and long-bone measurements suggest that he was left-handed.

Stature and Health. Stature (Table 2) is estimated to have been between 167 and 173 cm., with the best estimate being between 171 and 172 cm. from the regression formula utilizing all long bones for Mesoamericans developed

Table 1
BONE OF OTHER TAXA RECOVERED FROM THE BURIAL MATRIX^a

Frequency	Element	Taxa or Size-Class	Condition
1	pharyngeal arch	<i>Gila atraria</i> (chub)	complete
1	vertebra	fish	complete
1	quadrate	fish	complete
1	carpometacarpal	medium-sized bird	complete
2	third phalanges	fetal artiodactyl	complete
2	second phalanges	fetal artiodactyl	complete
1	limb bone	mammal class II ^b	scat bone

^a Other bones not listed above include: 24 unidentifiable bone pieces and 6 fish bones, unidentified to element

^b After Thomas (1969) mammal size-class II includes mammals the size of a squirrel or woodrat.

Table 2
STATURE ESTIMATES OF THE MOSIDA BURIAL
USING THE MESOAMERICAN FORMULAE
OF GENOVÉS (1967)

Regression Used	Stature	
	Left	Right
Femur only (± 3.42)	173.04	172.81
Tibia only (± 2.81)	167.30	168.28
All long bones (± 2.61) (radius, ulna, humerus, fibula, tibia, femur)	170.98	171.82

by Genovés (1967). Thus, the Mosida Man was of medium stature.

The decedent was generally healthy at the time of death, but several pathologies were noted. First, the left fourth rib was fractured antemortem along the anterior margin and repaired, leaving a unilateral calcified cartilaginous spur, which may have been attached to the left third rib, although the latter rib was too damaged to reconstruct. The sternum corpus curves laterally and there is bony growth and malformation at the costal margins in the region of the fourth rib. This pattern (rib plus sternum trauma and repair) usually indicates a healed fracture, perhaps from a fall or trauma to the chest area from a large blunt object. The healing showed no signs of post-trauma infection,

malformation, or reduction of movement. There is no evidence of stress during growth, by absence of anomalies in the teeth and long bones.

Tooth wear is moderate to substantial on all but the right premolars and all third molars. All incisors and the lower and upper left canines are worn to dentine, but 2 to 3 mm. of enamel remains on the outer surfaces, and the teeth all would have been healthy and useable. The upper left premolars were also worn to dentine.

Molars show the usual progression in tooth wear of first molars most, third molars least. The upper first molars are worn down to the root canals. The buccal surfaces of the alveolar processes surrounding the ¹M¹ and ²M² were abscessed with small holes of 0.5 to 1.0 mm. breaking through. The abscess on the right side had reached through the maxillary sinus to the lingual surface of the alveolar process with a foramen of approximately 2.5 mm. across. This condition would have been painful and possibly life-threatening; indeed, this is the most likely cause of death. The entire upper alveolar process was thinned and several anterior teeth were not solidly surrounded by bone. The teeth have heavy calculus deposits, but there is no evidence remaining of enamel hypoplasias; tooth wear could have eradicated evidence near the tooth tips where hypoplasias normally occur.

Very slight arthritic lipping is present along the anterior margins of the vertebral bodies on both upper and lower surfaces. There is also some evidence of arthritis on the lateral articular surface of the first left metatarsal, near the area where sesamoid bones are occasionally formed.

A mild form of spina bifida was found on the superior portion of the sacrum. There is evidence of well-healed spondylolysis; the spinous and transverse processes were detached from the fifth lumbar vertebra and free-floating as a single piece, articulating with the sacrum in a normal manner (McCullough et al. MSb). The spinal cord would not have been exposed and loss of movement is not usually expected.

Dog Remains

The feature included a nearly complete dog skeleton (Table 3). Tarsals, carpals, and sesamoids were missing, but these elements are very small and may have escaped detection in the wet sediments. Most of the elements are complete except the cranium, right mandible, both scapula and pelvis, the right tibia, and some of the ribs. Some of the edges of the breaks on the cranium and mandible are lighter-colored than the bone. This suggests the breaks are very recent and may have been created when the skeleton was discovered.

Several morphological features of the teeth and mandible of the Mosida dog match those of *Canis familiaris*. In particular, the mandibular tooth row is bowed, the coronoid process is thick, and the top bends caudally (Krantz 1959) (Fig. 6). More prominent features are the missing lower fourth premolars; missing first premolars are a more common trait found in contemporary and archaeological American aboriginal dogs (Allen 1920; Colton 1970; Dansie 1990:162), but missing fourth premolars have been observed in archaeological dog remains in the western Great Basin (Dansie 1984; Dansie and Schmitt 1986:250).

Dog-coyote and dog-wolf hybrids have been

reported from archaeological contexts in the Great Basin (Dansie 1984, 1990; Schmitt and Sharp 1990). Two characteristics that seem to distinguish these hybrids from true dogs are the length of the mandibular tooth row and lower first molar (Schmitt and Sharp 1990:82). True dogs consistently have smaller measurements than hybrids and wild canids. The length of the mandible and lower first molar of the Mosida specimen are comparable to those of other dogs found in archaeological contexts in the Great Basin (Fig. 7).

Additional physical characteristics of the dog can be inferred from the skeletal remains. The teeth are heavily worn suggesting an aged or very mature individual. The absence of a baculum may indicate that the animal was a female. In general, the length of the limb bones suggest that the animal was as large as or slightly larger than a coyote. Cranial characteristics suggest that the animal had a short broad nose, a steeply sloping forehead and mandibular widths indicate that the dog had relatively heavy jaws. Comparative analyses of additional morphological measurements are reported elsewhere (Lupo and Janetski MS). Some of these characteristics suggest an affinity to dogs recovered in other archaeological contexts in the western Great Basin and on the Colorado Plateau (see Lupo and Janetski [MS] for a complete discussion).

COMPARATIVE DISCUSSION

The following section discusses ethnographic and prehistoric burial practices for both humans and dogs in the Great Basin area as well as general comments on prehistoric dog remains for various time periods.

Ethnographic Burial Practices in the Eastern Great Basin

Utah Valley was home to the Timpanogos band of the Western Ute at the time of contact (Janetski 1991). Western Ute burial practices have been well described by Smith (1974) and

Table 3
ELEMENTS REPRESENTED IN THE DOG BURIAL FROM 42Ut808

Element	Side ^a	Condition ^b	Number
Cranium	NA	I	1
Mandible	R	I	1
Mandible	L	C	1
Atlas	NA	C	1
Axis	NA	C	5
Cervical vertebrae	NA	C	5
Thoracic vertebrae	NA	C	11
Lumbar vertebrae	NA	C	9
Caudal vertebrae	NA	C	11
Ribs ^c	—	C/I	30
Scapula	L	I	1
Scapula	L	I	1
Humerus	R	C	1
Humerus	L	C	1
Radius	R	C	1
Radius	L	C	1
Ulna	R	C	1
Ulnae	L	C	1
Carpals	—	C	7
Metacarpals	—	C	8
Pelvis	R	I	1
Pelvis	L	I	1
Sacrum	NA	C	1
Femur	R	C	1
Femur	L	C	1
Tibia	R	I	1
Tibia	L	C	1
Tarsals ^d	—	C	9
Metatarsals	—	C	8
Phalanges	—	C	10

^a R = right; L = left; NA = not applicable

^b C = complete; I = incomplete

^c Rib fragments occur in various degrees of completeness.

^d This includes complete right and left calcaneuses and astragali and one sesamoid.

Steward (1942). In general, burials were located in rocky slopes or crevices well away from residences (cf. Fike and Phillips 1984). The deceased was wrapped in a buckskin shroud and laid in a pit in an extended position. Burial goods, including horses, were common for higher status individuals such as the well known Wakara whose burial has been described in de-

tail (see Nickens [1984] for a description of Wakara's burial and an overview of historic Ute burial patterns). Bancroft (1889:278) cited an account of Indians (probably Shoshone) in the Salt Lake Valley, to the north of the Mosida site, killing "their dogs when their masters died," although he did not say whether they were buried together.



Fig. 6. Lateral view (a) of canid maxillae and mandibles and occlusal view (b) of left mandible from Mosida Burial.

Prehistoric Burial Patterns in the Eastern Great Basin

Following Madsen (1982) the prehistory of the eastern Great Basin includes the Late Prehistoric (A.D. 1300 to 1776 or Euroamerican

contact), a period characterized by hunting and gathering and which is often assumed to be comparable to the ethnographic or Numic life-way (cf. Jennings 1978; Madsen 1982); the Fremont (A.D. 400 to 1300), a period of farming; and the Archaic (8,000 B.C. to A.D. 400), a

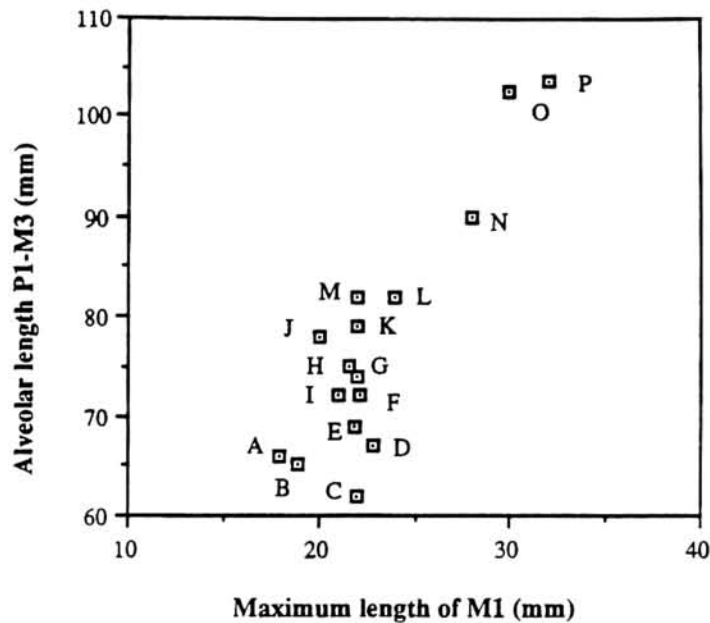


Fig. 7. Scatterplot comparing mandibular tooth row length and length of lower first molar of Great Basin canids.

LEGEND: A) *Canis familiaris*, 26Ch1049 (Schmitt and Sharp 1990); B) *Canis familiaris*, 26Ch1048 (Schmitt and Sharp 1990); C) *Canis familiaris*, 26Wa275 (Schmitt and Sharp 1990); D) *Canis familiaris*, Caldwell Village Burial 2 (Haag 1966); E) *Canis familiaris*, Hogup Cave (Haag 1966); F) *Canis familiaris*, Caldwell Village Burial 1 (Haag 1966); G) *Canis familiaris*, 42Ut808; H) *Canis familiaris*, Pharo Village (Haag 1968); I) coyote-dog hybrid, Nevada State Museum (Schmitt and Sharp 1990); J), *Canis latrans*, Nevada State Museum (Schmitt and Sharp 1990); K) *Canis latrans* or coyote-dog hybrid, Orbit Inn burial (Lupo n.d.); L) *Canis latrans*, Nevada State Museum (Schmitt and Sharp 1990); M) *Canis latrans*, Nevada State Museum (Schmitt and Sharp 1990); N) wolf-dog hybrid, Stillwater Marsh (Schmitt and Sharp 1990); O) *Canis lupus*, Nevada State Museum (Schmitt and Sharp 1990); P) *Canis lupus*, Stillwater Marsh (Schmitt and Sharp 1990).

period of broad-spectrum hunting and gathering. A brief description of burial patterns from each time period is provided herein for comparative purposes.

Late Prehistoric. Few Late Prehistoric human remains have been reported for the Wasatch Front region and none have been found in Utah Valley. However, useful data are now available from the Great Salt Lake area due to the recovery of numerous burials exposed in the mid-1980s by the receding waters of the lake (Simms et al. 1991). All 37 burials assigned to this period were flexed and probably placed in pits, although pits were often not discernible due to erosion by lake waters (Simms et al. 1991: 25). Grave goods were rare. Burials tended to

be located on site peripheries or somewhat away from the primary site area. The most recent radiocarbon dates from these burials fall into the A.D. 1600s (Simms et al. 1991:61).

Canid remains are present in Late Prehistoric sites, although reported examples appear to be hybrids of dogs and wild species. For example, a nearly complete skeleton of a wolf-dog hybrid was found in a refuse pit at Sandy Beach, a site on the north shore of Utah Lake dated to about A.D. 1400 (Janetski 1990:242). An intentional coyote or possible coyote-dog hybrid burial was found at Orbit Inn, a Late Prehistoric open wetland site near Brigham City (Simms and Heath 1990). Several elements in this burial were cut-marked. The location of all

marks suggests that the hide was removed prior to interment (Lupo MS).

Fremont. Burial data from this period are considerably more numerous than those for the Late Prehistoric as many more sites have been excavated. Madsen and Lindsay (1977:76) have described Fremont burial patterns as highly variable with bodies flexed, extended, sitting, and facing all directions. Burial location was in pits beneath the floors of structures or in refuse areas with no pits. In most cases burials were located near habitations. Ambler (1966:30) characterized Fremont burial practices as expedient. Grave goods are nearly always absent. Exceptions include rather elaborate grave goods from Parowan Valley and the Great Salt Lake area. In the former, burial goods included probable bird and weasel skins, bone and chipped stone tools, minerals, and, indirectly, projectile points and complete ceramic vessels (Davis 1956; Dodd 1982). The most elaborate Fremont burial recovered by Simms et al. (1991:45) from the Great Salt Lake contained bone, chipped stone, and ground stone tools. Dog remains, including burials, are well documented at Fremont sites, although the latter are not common. Only two dog burials have been recorded and both were found at Caldwell Village (Ambler 1966; Haag 1966). Other dog remains include an incomplete skeleton from Pharo Village, a possible cranium from Backhoe Village (Madsen and Lindsay 1977:74), and a possible dog bone from Median Village (Dalley 1970). Aikens (1967) mentioned the remains of at least two domestic dogs from Snake Rock Village; however, the depositional context of these remains was not reported and it is not clear if complete or partial skeletons were recovered. A single dog bone was recovered from Smoking Pipe, a Fremont site located near Utah Lake (Janetski 1990), and finally, a nearly complete skeleton and additional cranial remains were recovered from Nawthis Village (Sharp 1992).

Archaic. As noted in the introduction, human remains of Archaic age are remarkable for their scarcity in the eastern Great Basin and Utah generally. A single fragment of a pubis was found in the Archaic levels (DII) of Danger Cave (Jennings 1957:215) and no human bone was found in the Archaic levels of Hogup Cave (Aikens 1970). Steward (1937:42) reported finding the "upper jaw of a youth" in a pack rat's nest in Promontory Cave No. 2 at the north end of the Great Salt Lake, but found no other human remains in any of the Promontory caves. A burial from Sandwich Shelter on Stansbury Island at the south end of the Great Salt Lake (David B. Madsen, personal communication 1991) may have been Archaic but it was not dated.

Deadman's Cave, on the other hand, at the south edge of the Great Salt Lake contained several burials. Buettner-Janusch (1954:1), in consultation with the excavator Elmer Smith, reported five deliberate burials containing at least 14 individuals and an additional 12 individuals represented by remains scattered through the deposits. Age estimates of the burials based on "geological and climatological evidence" place the remains between 3,000 and 7,000 years ago. Holmer (1983) re-examined the points from Deadman's Cave and identified Pinto Shouldered, Humboldt Concave-base, Northern Side-notched, and Gypsum projectile points, which suggest use of the site from the early through the late Archaic (7,600-1,500 B.P.). Unfortunately, the provenience for most points from Deadman Cave is unknown (Holmer 1983:39). Burial 1 included what Smith (1952:34) called a Type I-II point that appears to be an Elko Corner-notched style. Elko points are not temporally sensitive in the eastern Great Basin, however (Holmer 1986:101). Other burial goods included ground stone, pigments, and ceramics (see Smith 1952).

The best controlled skeletal evidence of Archaic peoples in Utah was recovered from

Sudden Shelter in the south central portion of the state (Jennings et al. 1980). The human remains here consisted of an older female, a juvenile, and an isolated mandible (see Hylton and McCullough [1980] for complete descriptions). The female and the juvenile were both from Stratum 7 which was bracketed by dates of $6,310 \pm 240$ and $6,670 \pm 180$ RCYBP. They apparently had been placed in a flexed position in shallow pits less than a meter apart. No burial goods were present. The mandible was from the upper levels of the site and was thought to be secondarily deposited (Jennings et al. 1980:61).

In Utah Valley, dated Archaic occupations are limited to Spotten Cave (Mock 1971) and American Fork Cave (Hansen and Stokes 1941; Janetski 1990a), but neither contained burials. No human remains of any age have been recovered in a controlled context from the edge of Utah Lake. Hansen (1934) and Bee and Bee (1934-1966), however, reported burials from uncontrolled and undated contexts from the east shore of the Utah Lake, while Baker and Janetski (1992) found fragments of human bone from surface sites on the north and east shore of the lake. Importantly, two undated burials were discovered in 1939 in the town of Payson in Utah Valley and reported much later by Jones (1961:75-76). Burial A contained two flexed burials, apparently adults; Burial B, located 10 feet away, contained the flexed remains of a female and a large dog. Both were buried in circular pits about 4 to 4.5 ft. deep. No grave goods were present and there is no other indication of the age of the interment.

This scarcity of burials for Utah Valley is in decided contrast to the many burials documented at open sites in the wetlands that border the eastern edge of the Great Salt Lake as noted above (Russell et al. 1989; Simms et al. 1991). However, apparently none of the burials found in the Great Salt Lake marshes are Archaic in age.

The oldest reported domestic dog remains in the eastern Great Basin and perhaps the New World (given the re-assessment of the Jaguar Cave dogs [Morey and Wiant 1992:225]) are from Danger Cave and date to between 9,000 and 10,000 B.P. (Grayson 1988:23). At nearby Hogup Cave the cranium of a domestic dog was recovered from Stratum 4 which was associated with a radiocarbon date of 7,815 B.P. (Haag 1970, Appendix VIII). A few bones identified as possibly dog or coyote were also found in Black Rock Cave (Juell 1983) in levels that date to 6,100 B.P.

Western Great Basin Burials

Western Great Basin burials, many dating prior to 2,000 B.P., are abundant in the several caves in the vicinity of Winnemucca Lake, the Humboldt and Carson sinks (cf. Orr 1965; Loud and Harrington 1929), and at open sites such as those in the Stillwater Marsh area (Tuohy et al. 1987). Human remains from Fishbone Cave on the northeast shore of Winnemucca Lake are among the earliest in western North America. The site contained a partial human skeleton lying on a mat of "shredded cedar [juniper] bark" (Orr 1956:19, 1974:50) dated to $11,200 \pm 250$ and $10,900 \pm 300$ RCYBP. The matting is actually an open twined textile not unlike that from the Mosida Burial. At nearby Cowbone Cave a male burial wrapped in mountain sheep skin and lying on a juniper bark mat was dated to $5,970 \pm 150$ RCYBP (Orr 1965, 1974). Orr (1952, 1965, 1974) also described later burials dating to about A.D. 1 from Crypt and Chimney caves.

Human remains are likewise abundant in caves in the vicinity of Humboldt and Carson sinks to the west of Winnemucca Lake. Lovelock Cave contained a minimum of 57 individuals at least two of which date to about 3,000 B.P. (Loud and Harrington 1929; Heizer and Napton 1970). Heizer (1951) also dated a burial at Leonard Rockshelter to 5,500 B.P.

(see Larsen [1985] and Kobori [1981] for good reviews of burial data, most of which is undated, from a number of other sheltered and open sites in the Carson and Humboldt sinks region).

The numbers of individual burials reported from the sheltered sites, however, pales in contrast to the hundreds of burials uncovered following the flooding of the Stillwater Marsh in the 1980s (Tuohy et al. 1987; Brooks et al. 1988). Dating of these burials has been relative only, but a number were associated with Elko points, suggesting an age of 1,200 B.C. to A.D. 200 or so (Holmer 1986; Thomas 1981). Burial goods were present in the Stillwater graves and included both artifacts and faunal remains with a significantly greater tendency for male burials to contain more goods than female burials. Grave offerings included projectile points, flakes, bone awls, beads and other items of decoration, and animals. Only two of the burials contained canid remains (Tuohy et al. 1987:262) and neither of these were complete specimens. It is also clear from the data that many of these burials date to the post-Archaic or Rosegate period.

Dansie (1984, 1990; Dansie and Schmitt 1986) has summarized the available data on dog remains from archaeological sites in the western Great Basin. These data suggest that dog (as well as wild canid) remains are relatively more abundant at sites in the western rather than eastern Great Basin. Although the number of formal dog burials is limited, numerous skeletal elements have been recovered from open and cave sites in the western Great Basin. Dog and wild canid remains are particularly abundant at sites in wetland habitats (Dansie 1990). Most of the dog remains discussed here appear to date between 3,500 and 650 years B.P. (Dansie 1990). While older dog remains have been found in the eastern Great Basin, far fewer dog and wild canid specimens occur and intentional dog burials, in particular, are limited. Clearly,

the Mosida Burial is of significance as it constitutes the oldest associated burials of a human and a dog in the Great Basin.

Archaic Ideology

Any discussion about Archaic ideology is necessarily highly inferential, but some observations are both possible and appropriate given that the burial of the man as well as the placing of burial goods and the dog in the grave was done in the context of an ideological system. The burial and its contents, therefore, are a statement about that system. At a minimum, the presence of the man and the dog in a formal burial with goods suggests a concern with death and life after death.

Prior to the arrival of the horse, dogs were used as pack animals, hunting aides, and camp pets in the Great Basin (cf. Dansie 1990:162), a practice that may have considerable age (see Lawrence [1968], but also Gowlett et al. [1987] for discussion of dogs at Jaguar Cave in Idaho). The inclusion of the dog in the burial pit, therefore, may suggest similarities to the ethnographic practice of providing the deceased with a helpful companion in the afterlife. There is, however, no evidence that the dog found at the Mosida site was killed and then placed in the grave. Further, relying on analogues derived from historic Great Basin peoples may be inappropriate given the possibility that their arrival in the area postdates A.D. 1300 (Bettinger and Baumhoff 1982). Additional musings about social status, the Archaic afterlife, reasons for the presence of the burial goods, etc., are possible, but, without a larger context are gross speculation. Most fundamentally, the Mosida Burial demonstrates a very human concern with loss of life and is evidence of the attention paid to the departed by his family and community.

CONCLUSIONS

The Mosida Burial has provided preliminary but new information on several topics related to

Archaic life in the eastern Great Basin. First, it is clear from the above review of burial patterns that the Mosida interment is consistent with prehistoric burials in that the preferred pattern of burial for much of prehistory was in pits near places of residence. Grave goods were scarce at all times with the most elaborate burials occurring during the Fremont period. Positioning of the deceased was variable, but flexed seems to have been more common than extended. Interestingly, the only known break in the burial pattern occurs very late during the historic or ethnographic period when extended burials were made in rocky talus slopes well away from village locations. The use of twined juniper bark matting, perhaps as a shroud or as a mat on which the deceased was laid, was common and has been documented for several early burials, especially in the western Great Basin (cf. Orr 1965).

Second, the man recovered from the Mosida Burial was middle-aged and had apparently enjoyed good health for much of his life. This condition is in contrast with the general health of later farmers who suffered from nutritional stress (cf. Andrews 1977; Simms et al. 1991). The generally robust health of this individual is consistent with findings by Larsen (1985:404) for fisher-hunter-gatherers in the Carson Sink region of the western Great Basin.

Third, insights into social and ideological aspects of Archaic life are few. The inclusion of burial goods and the dog makes a statement about the Archaic belief in an afterlife and a concern for the deceased. Even these statements are conjectural, of course, but the Mosida example provides some basis for future comparisons.

Finally, the Mosida Burial is the first controlled and reported case of a dog being included in a human burial in the Great Basin and the early date places it among the earliest human-dog burials in North America. Additional early dog burials and dogs interred with people are known from mid-Archaic sites in the

southeastern United States (Morey 1992:184-5). The best known of these is probably Indian Knoll in Kentucky which contained several human burials with dogs (Webb 1974). Corrected radiocarbon dates on antler from Indian Knoll fall between 4,500 and 6,100 B.P. (Winter 1974:xviii), although Marquardt and Watson (1983:334) stated that Indian Knoll dates "cluster in the late third millennium B.C." If so, the Mosida Burial may be slightly older than the Indian Knoll remains.

The earliest dog burials in North America are those from the Koster Site, dated to 8,500 B.P. (Morey and Wiant 1992), while the earliest domestic dog comes from Danger Cave (Grayson 1988:23), which, like the Mosida Burial, is in the eastern Great Basin. The early dates on the Danger Cave canid (9,000 and 10,000 B.P.) suggest that domestic dogs may have accompanied the initial settlers of this region. Morey and Wiant (1992:228) eloquently argued that the Koster canid burials are evidence of an "affectionate relationship between dogs and humans" by the early Archaic in the Eastern Woodlands. The inclusion of a dog in the 5,500 year-old Mosida Burial suggests similar ties between people and dogs in the Great Basin during the mid-Archaic. Taken with the Danger Cave evidence, these data argue that a close human-dog relationship was a continent-wide phenomenon very early in New World prehistory.

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